

# **Trace Elements Risk Assessment in Taps Drinking Water of Ramadi City, Anbar Province, Iraq**

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## **Abstract**

The main target of this research is to assess the risk exposure into specified trace elements (TEs) in taps drinking water of Ramadi city, western Iraq. Non-carcinogenic risks (Hazardous Index) for adults and children were estimated, and carcinogenic risks (CR) were determined. Results obtained in this research indicate that the non-carcinogenic risks (NCR) analysis of (TEs) for adults and children were the most hazardous quotient (HQ) of all (TEs) values, which were less than 1, except for (As). The hazardous index (HI) of (TEs) values was more than 1, which means that there could be a potential risk to human health. Based on USEPA (2015) the safe value for cancer risk (CR) exposed by a TE is less than  $1.00E-06$ . Assessment of (CR) analysis of (TEs) for adults and children revealed that (CR) of (TEs) values were fell within the  $E-03$  to  $E-06$  range. The total average (CR) was  $3.19E-03$  per capita; The total average CR was extremely high. The current concentrations of TEs in taps drinking water could cause health and environmental issues that must be addressed. Water with high (TEs) concentrations should be handled and managed before it can be distributed to consumers.